

Form PTO-1449

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Applicant:

James E. Moon, et al.

Serial No.:

09/707,653- 09/702,955

Att'y Docket No. 14917.1.6

Filing Date:

November 7, 2000

Group: 1743

For:

INTEGRATED MONOLITHIC MICROFABRICATED ELECTROSPRAY AND
LIQUID CHROMATOGRAPHY SYSTEM AND METHOD

SUPPLEMENTAL
INFORMATION DISCLOSURE CITATIONS MADE BY APPLICANTS

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U.S. Patent Documents

<u>Examiner Initial*</u>	<u>Patent Number</u>	<u>Issue Date</u>	<u>Name</u>	<u>Class</u>	<u>Sub Class</u>	<u>Filing Date</u>
<u>EGT</u> A1	3,538,744	11/10/760	Karasek	73	23.1	11/09/67
<u>EGT</u> A2	3,738,759	6/12/73	Dittrich, et al.	356	208	4/16/70
<u>EGT</u> A3	3,915,652	10/28/75	Natekon	23	259	12/16/74
<u>EGT</u> A4	4,056,324	11/1/77	Göhde	356	246	5/5/76
<u>EGT</u> A5	4,356,722	11/2/82	Bunce, et al.	73	53	11/5/80
<u>EGT</u> A6	4,366,118	12/28/82	Bunce, et al.	422	57	6/13/79
<u>EGT</u> A7	4,369,664	1/25/83	Bunce, et al.	73	864.12	10/24/80
<u>EGT</u> A8	4,459,267	7/10/84	Bunce, et al.	422	100	5/20/82
<u>EGT</u> A9	4,593,728	6/10/86	Whitehead, et al.	141	98	11/14/83
<u>EGT</u> A10	4,708,782	11/24/87	Andresen, et al.	204	299	9/15/86
<u>EGT</u> A11	4,879,097	11/7/89	Whitehead, et al.	422	67	4/4/86
<u>EGT</u> A12	4,891,120	1/2/90	Sethi, et al.	204	299	6/8/87
<u>EGT</u> A13	4,908,112	3/13/90	Pace	204	299	6/16/88
<u>EGT</u> A14	4,983,038	1/8/91	Ohki, et al.	356	246	4/7/88
<u>EGT</u> A15	4,999,493	3/12/91	Allen, et al.	250	288	4/24/90
<u>EGT</u> A16	5,015,845	5/14/91	Allen, et al.	250	288	6/1/90
<u>EGT</u> A17	5,110,745	5/5/92	Kricka, et al.	436	87	6/1/89
<u>EGT</u> A18	5,126,022	6/30/92	Scane, et al.	204	180.1	2/28/90
<u>EGT</u> A19	5,132,012	7/21/92	Mura, et al.	210	198.2	6/22/89

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<u>EGT</u> A20	5,180,480	1/19/93	Manz	204	299	1/13/91
<u>EGT</u> A21	5,245,185	9/14/93	Busch, et al	250	288	11/5/91
<u>EGT</u> A22	5,269,900	12/14/93	Jorgenson, et al	204	299	9/13/90
<u>EGT</u> A23	5,283,036	2/1/94	Hofmann, et al	422	70	2/5/92
<u>EGT</u> A24	5,296,114	3/22/94	Manz	204	180.1	11/30/92
<u>EGT</u> A25	5,296,375	3/22/94	Kricka, et al	435	291	5/1/92
<u>EGT</u> A26	5,302,533	4/12/94	Kricka	436	537	4/10/92
<u>EGT</u> A27	5,304,487	4/19/94	Wilding, et al	435	291	5/1/92
<u>EGT</u> A28	5,306,621	4/26/94	Kricka	435	7.91	10/16/90
<u>EGT</u> A29	5,328,578	7/12/94	Gordon	204	180.1	6/15/93
<u>EGT</u> A30	5,331,159	7/19/94	Apffel, Jr., et al	250	288	1/22/93
<u>EGT</u> A31	5,332,481	7/26/94	Guttman	204	182.8	11/13/91
<u>EGT</u> A32	5,338,427	8/16/94	Shurtle, et al	204	299	2/26/93
<u>EGT</u> A33	5,349,186	9/20/94	Ikonomou, et al	250	288	6/25/93
<u>EGT</u> A34	5,374,834	12/20/94	Geis, et al	257	239	10/12/93
<u>EGT</u> A35	5,376,252	12/27/94	Ekström, et al	204	299	11/10/92
<u>EGT</u> A36	5,387,329	2/7/95	Foos, et al	204	415	4/9/93
<u>EGT</u> A37	5,401,376	3/28/95	Foos, et al	204	415	3/11/94
<u>EGT</u> A38	5,401,963	3/28/95	Sittler	250	288	11/1/93
<u>EGT</u> A39	5,415,841	5/16/95	Dovich, et al	422	68.1	8/18/94
<u>EGT</u> A40	5,421,980	6/6/95	Guttman	204	299	7/8/94
<u>EGT</u> A41	5,427,946	6/27/95	Kricka, et al	435	291	1/21/94
<u>EGT</u> A42	5,429,734	7/4/95	Gajar, et al	204	299	10/12/93
<u>EGT</u> A43	5,486,335	1/23/96	Wilding, et al	422	55	4/24/95

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EGT	Number	Date	Author	Class	Class	Date
EGT A44	5,498,392	3/12/96	Wilding, et al	422	68.1	9/19/94
EGT A45	5,512,131	4/30/96	Kumar, et al	156	655.1	10/4/93
EGT A46	5,512,451	4/30/96	Knicka	435	28	3/25/94
EGT A47	5,572,023	11/5/96	Caprioli	250	288	5/30/95
EGT A48	5,652,427	7/29/97	Whitehouse, et al	250	288	5/14/96
EGT A49	5,877,495	3/2/99	Takada, et al	250	288	8/7/95
EGT A50	6,005,245	12/21/99	Sakari, et al	250	281	8/29/97
EGT A51	6,060,705	5/9/00	Whitehouse, et al	250	288	12/10/97
EGT A52	6,114,693	9/5/00	Hirabayashi, et al	250	288	4/27/99
EGT A53	6,245,227	6/12/01	Moon, et al	210	198.2	9/17/98

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U.S. Published Patent Application Documents

Examiner Initial*	Patent App. Number	Publ. Number	Name	Filing Date	Class	Class	Trans-lation
EGT A54	09/745,629	2001-0001455	Davis, et al	5/24/01 12/21/00	210	635	37
EGT A55	09/745,652	2001-0001460	Davis, et al	5/24/01 12/21/00	216	37	
EGT A56	09/745,779	2001-0001456	Davis, et al	5/24/01 12/21/00	210	635	
EGT A57	09/746,866	2001-0001474	Davis, et al	5/24/01 12/21/00	237	3	
EGT A58	09/747,080	2001-0001452	Davis, et al	5/24/01 12/21/00	210	1982	

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Foreign Patent Documents

Examiner Initial*	Document Number	Publ. Date	Country or Patent Office	Sub Class	Class	Trans-lation
EGT A59	DE 43 18 407	12/1994	Germany	250	288	No
EGT A60	EP 637,998	7/1996	Europe	50	288	NA NO
EGT A61	EP 639,223	7/1996	Europe	250	288	NA NO

No copy of A59 has been received.

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<u>EGT</u> A62	GB 2 260 282	4/1993	Great Britain	280	288	NA	NO
<u>EGT</u> A63	WO 92/03720	3/1992	PCT	250	288	NA	NO
<u>EGT</u> A64	WO 96/04547	2/1996	PCT	250	288	NA	NO
<u>EGT</u> A65	WO 96/14933	5/1996	PCT	250	288	NA	NO
<u>EGT</u> A66	WO 96/14934	5/1996	PCT	250	288	NA	NO
<u>EGT</u> A67	WO 96/15269	5/1996	PCT	250	288	NA	NO

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Other Documents

(including author (if listed), title, relevant pages, date of publication including at least month and year).

Examiner

Initial*

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EGT A68

Andren, Per E., et al., "Micro-Electrospray: Zeptomole/Attomole per Microliter Sensitivity for Peptides," 1994, American Society for Mass Spectrometry, pp. 867-869.

EGT A69

Angell, James B., et al., "Silicon Micromechanical Devices," 1983, Scientific American, pp. 44-55.

EGT A70

Beavis, Ronald C., et al., "Automated Dry Fraction Collection for Microbore High-Performance Liquid Chromatography-Mass Spectrometry," 1986, Journal of Chromatography, 359, pp. 489-497.

EGT A71

Beavis, R.C., et al., "Off-Line Coupling of a Microbore High-Performance Liquid Chromatograph to a Secondary Ion-Time of Flight Mass Spectrometer," 1990, Analytical Chemistry, pp. 1259-1264.

EGT A72

Burggrat, Norbert, et al., "Synchronized Cyclic Capillary Electrophoresis - A Novel Approach to Ion Separations in Solution", October, 1993, Journal of High Resolution Chromatography, Vol. 16, pp. 594-596.

EGT A73

Cheng, Jing, et al., "Chip PCR.II. Investigation of Different PCR Amplification Systems in Microfabricated Silicon-Glass Chips," 1996, Nucleic Acids Research, Vol. 24, No. 2, pp. 380-385.

EGT A74

Chu, Yen-Ho, et al., "Affinity Capillary Electrophoresis-Mass Spectrometry for Screening Combinatorial Libraries," 1996, Journal of the American Chemical Society, pp. 7827-7835.

EGT A75

Cowan, S., et al., "An On-Chip Miniature Liquid Chromatography System: Design, Construction and Characterization," 1995, Micro Total Analysis Systems, pp. 295-298.

EGT A76

Davis, Michael T., et al., "A Microscale Electrospray Interface for On-Line, Capillary Liquid Chromatography/Tandem Mass Spectrometry of Complex Peptide Mixtures," 1995, Analytical Chemistry, 67, pp. 4549-4556.

Examiner:

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Date Considered:

May 22, 2002

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 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2981, 2982, 2983, 2984, 2985, 2986, 2987, 2988, 2989, 2990, 2991, 2992, 2993, 2994, 2995, 2996, 2997, 2998, 2999, 3000, 3001, 3002, 3003, 3004, 3005, 3006, 3007, 3008, 3009, 3010, 3011, 3012, 3013, 3014, 3015, 3016, 3017, 3018, 3019, 3020, 3021, 3022, 3023, 3024, 3025, 3026, 3027, 3028, 3029, 3030, 3031, 3032, 3033, 3034, 3035, 3036, 3037, 3038, 3039, 3040, 3041, 3042, 3043, 3044, 3045, 3046, 3047, 3048, 3049, 3050, 3051, 3052, 3053, 3054, 3055, 3056, 3057, 3058, 3059, 3060, 3061, 3062, 3063, 3064, 3065, 3066, 3067, 3068, 3069, 3070, 3071, 3072, 3073, 3074, 3075, 3076, 3077, 3078, 3079, 3080, 3081, 3082, 3083, 3084, 3085, 3086, 3087, 3088, 3089, 3090, 3091, 3092, 3093, 3094, 3095, 3096, 3097, 3098, 3099, 3100, 3101, 3102, 3103, 3104, 3105, 3106, 3107, 3108, 3109, 3110, 3111, 3112, 3113, 3114, 3115, 3116, 3117, 3118, 3119, 3120, 3121, 3122, 3123, 3124, 3125, 3126, 3127, 3128, 3129, 3130, 3131, 3132, 3133, 3134, 3135, 3136, 3137, 3138, 3139, 3140, 3141, 3142, 3143, 3144, 3145, 3146, 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3313, 3314, 3315, 3316, 3317, 3318, 3319, 3320, 3321, 3322, 3323, 3324, 3325, 3326, 3327, 3328, 3329, 3330, 3331, 3332, 3333, 3334, 3335, 3336, 3337, 3338, 3339, 3340, 3341, 3342, 3343, 3344, 3345, 3346, 3347, 3348, 3349, 3350, 3351, 3352, 3353, 3354, 3355, 3356, 3357, 3358, 3359, 3360, 3361, 3362, 3363, 3364, 3365, 3366, 3367, 3368, 3369, 3370, 3371, 3372, 3373, 3374, 3375, 3376, 3377, 3378, 3379, 3380, 3381, 3382, 3383, 3384, 3385, 3386, 3387, 3388, 3389, 3390, 3391, 3392, 3393, 3394, 3395, 3396, 3397, 3398, 3399, 3400, 3401, 3402, 3403, 3404, 3405, 3406, 3407, 3408, 3409, 3410, 3411, 3412, 3413, 3414, 3415, 3416, 3417, 3418, 3419, 3420, 3421, 3422, 3423, 3424, 3425, 3426, 3427, 3428, 3429, 3430, 3431, 3432, 3433, 3434, 3435, 3436, 3437, 3438, 3439, 3440, 3441, 3442, 3443, 3444, 3445, 3446, 3447, 3448, 3449, 3450, 3451, 3452, 3453, 3454, 3455, 3456, 3457, 3458, 3459, 3460, 3461, 3462, 3463, 3464, 3465, 3466, 3467, 3468, 3469, 3470, 3471, 3472, 3473, 3474, 3475, 3476, 3477, 3478, 3479, 3480, 3481, 3482, 3483, 3484, 3485, 3486, 3487, 3488, 3489, 3490, 3491, 3492, 3493, 3494, 3495, 3496, 3497, 3498, 3499, 3500, 3501, 3502, 3503, 3504, 3505, 3506, 3507, 3508, 3509, 3510, 3511, 3512, 3513, 3514, 3515, 3516, 3517, 3518, 3519, 3520, 3521, 3522, 3523, 3524, 3525, 3526, 3527, 3528, 3529, 3530, 3531, 3532, 3533, 3534, 3535, 3536, 3537, 3538, 3539, 3540, 3541, 3542, 3543, 3544, 3545, 3546, 3547, 3548, 3549, 3550, 3551, 3552, 3553, 3554, 3555, 3556, 3557, 3558, 3559, 3560, 3561, 3562, 3563, 3564, 3565, 3566, 3567, 3568, 3569, 3570, 3571, 3572, 3573, 3574, 3575, 3576, 3577, 3578, 3579, 3580, 3581, 3582, 3583, 3584, 3585, 3586, 3587, 3588, 3589, 3590, 3591, 3592, 3593, 3594, 3595, 3596, 3597, 3598, 3599, 3600, 3601, 3602, 3603, 3604, 3605, 3606, 3607, 3608, 3609, 3610, 3611, 3612, 3613, 3614, 3615, 3616, 3617, 3618, 3619, 36

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Sheet 5 of 16

Att'y Docket No. 14917.1.6

Group: 1743

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COPY OF PAPERS
ORIGINALLY FILED

EGT A77

Demi, M., et al., "Electric Sample Splitter for Capillary Zone Electrophoresis," 1985, Journal of Chromatography, 320, pp. 159-165.

EGT A78

Doherty, Steven J., et al., "Rapid On-Line Analysis Using a Micromachined Gas Chromatograph Coupled to a Bench-Top Quadrupole Mass Spectrometer," 1994, LC-GC Vol. 12, No. 11, pp. 846-850.

EGT A79

Effenhauser, Carlo S., et al., "High-Speed Separation of Antisense Oligonucleotides on a Micromachined Capillary Electrophoresis Device," 1994, Analytical Chemistry, 66, pp. 2949-2953.

EGT A80

Effenhauser, Carlo S., et al., "Glass Chips for High-Speed Capillary Electrophoresis Separations with Submicrometer Plate Height," 1993, Analytical Chemistry, 65, pp. 2637-2642.

EGT A81

Effenhauser, Carlo S., et al., "Manipulation of Sample Fractions on a Capillary Electrophoresis Chip," July 1, 1995, Analytical Chemistry, Vol. 67, No. 13, pp. 2284-2287.

EGT A82

Elwenspock, M., et al., "Silicon Microstructures for Fluid Handling," 1994, Analysis Magazine, pp. 1-4.

EGT A83

Emmett, Mark R., et al., "Micro-Electrospray Mass Spectrometry: Ultra-High-Sensitivity Analysis of Peptides and Proteins," 1994, American Society for Mass Spectrometry, pp. 605-613.

EGT A84

Fan, Zhonghui H., et al., "Micromachining of Capillary Electrophoresis Injectors and Separators on Glass Chips and Evaluation of Flow at Capillary Intersections," January 1, 1994, Analytical Chemistry, Vol. 66, No. 1, pp. 177-184.

EGT A85

Fang, Ling, et al., "On-Line Time-of-Flight Mass Spectrometric Analysis of Peptides Separated by Capillary Electrophoresis," November 1, 1994, Analytical Chemistry, Vol. 66, No. 21, pp. 3696-3701.

EGT A86

Figueroa, Alvaro, et al., "High-Performance Immobilized Metal Affinity Chromatography of Proteins on Iminodiacetic and Acid Silica-Based Bonded Phases," 1986, Journal of Chromatography, 371, pp. 335-352.

EGT A87

Harrison, D. Jed, et al., "Rapid Separation of Fluorescein Derivatives Using a Micromachined Capillary Electrophoresis System," 1993, Analytica Chimica Acta, 283, pp. 361-366.

EGT A88

Harrison, D. Jed, et al., "Capillary Electrophoresis and Sample Injection Systems Integrated on a Planar Glass Chip," 1992, Analytical Chemistry, pp. 1926-1932.

EGT A89

Harrison, D. Jed, et al., "Towards Miniaturized Electrophoresis and Chemical Analysis Systems on Silicon: An Alternative to Chemical Sensors," 1993, Sensors and Actuators, pp. 107-116.

EGT A90

Jacobson, Stephen C., et al., "Microchip Electrophoresis with Sample Stacking," 1995, Electrophoresis, 15, pp. 481-486.

EGT A91

Jacobson, Stephen C., et al., "Fused Quartz Substrates for Microchip Electrophoresis," 1995, Analytical Chemistry, 67, pp. 2059-2063.

EGT A92

Jacobson, Stephen C., et al., "Microchip Capillary Electrophoresis with an Integrated Postcolumn Reactor," October 15, 1994, Analytical Chemistry, Vol. 66, No. 20, pp. 3472-3476.

Examiner:

THEKORW

Date Considered:

MAY 22, 2002

*EXAMINER: Initial if reference considered, whether or not citation is in conformance.

Form PTO-1449

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Sheet 6 of 16

Att'y Docket No. 14917.1.6

Group: 1743

FC 1700

COPY OF PAPERS
ORIGINALLY FILED

EGT A93

Jacobson, Stephen C., et al., "Effects of Injection Schemes and Column Geometry on the Performance of Microchip Electrophoresis Devices," 1994, Analytical Chemistry, 66, pp. 1107-1113.

EGT A94

Jacobson, Stephen C., et al., "Integrated Microdevice for DNA Restriction Fragment Analysis," 1996, Analytical Chemistry, 68, pp. 720-723.

EGT A95

Jacobson, Stephen C., et al., "Precolumn Reactions with Electrophoretic Analysis Integrated on a Microchip," 1994, Analytical Chemistry, 66, pp. 4127-4132.

EGT A96

Jansson, Marten, et al., "Micro Vials on a Silicon Wafer for Sample Introduction in Capillary Electrophoresis," 1992, Journal of Chromatography, 626, pp. 310-314.

EGT A97

Ko, Wen H., et al., "Semiconductor Integrated Circuit Technology and Micromachining," pp. 109-168. Undated

EGT A98

Komer, Roman, et al., "Nano Electrospray Combined with a Quadrupole Ion Trap for the Analysis of Peptides and Protein Digests," 1996, American Society for Mass Spectrometry, pp. 150-156.

EGT A99

Koutney, Lance B., et al., "Microchip Electrophoretic Immunoassay for Serum Cortisol," 1996, Analytical Chemistry, 68, pp. 18-22.

EGT A100

Kruger, M. Scott, et al., "Durable Gold-Coated Fused Silica Capillaries for Use in Electrospray Mass Spectrometry," 1995, Analytical Chemistry, 67, pp. 385-389.

EGT A101

Manz, A., et al., "Micromachining of Monocrystalline Silicon and Glass for Chemical Analysis Systems," 1991, Trends in Analytical Chemistry, Vol. 10, No. 5, pp. 144-149.

EGT A102

Manz, Andreas, et al., "Planar Chips Technology for Miniaturization and Integration of Separation Techniques into Monitoring Systems," 1992, Journal of Chromatography, 593, pp. 253-258.

EGT A103

Manz, Andreas, et al., "Planar Chips Technology for Miniaturization of Separation Systems: A Development Perspective in Chemical Monitoring," 1993, Advances in Chromatography, pp. 1-67.

EGT A104

Manz, A., et al., "Design of an Open-Tubular Column Liquid Chromatography Using Silicon Chip Technology," 1990, Sensors and Actuators, B1, pp. 249-255.

EGT A105

Manz, Andreas, et al., "Miniaturization of Separation Techniques Using Planar Chip Technology," July, 1993, Journal of High Resolution Chromatography, Vol. 16, pp. 433-436.

EGT A106

Manz, Andreas, et al., "Planar Chip Technology for Capillary Electrophoresis," 1994, Fresenius Journal of Analytical Chemistry, 348, pp. 567-571.

EGT A107

Moore, Alvin W., Jr., et al., "Microchip Separations of Neutral Species via Micellar Electrokinetic Capillary Chromatography," November 15, 1995, Analytical Chemistry, Vol. 67, No. 22, pp. 4184-4189.

EGT A108

Nichols, William, et al., "CE-MS for Industrial Applications Using a Liquid Junction with Ion-Spray and CF-FAB Mass Spectrometry," 1992, LC-GC, Vol. 10, No. 9, pp. 676-686.

Examiner:

THEER KORN

Date Considered:

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*EXAMINER: Initial if reference considered, whether or not citation is in conformance

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James E. Moon, et al

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INTEGRATED MONOLITHIC MICROFABRICATED ELECTROSPRAY AND LIQUID CHROMATOGRAPHY SYSTEM AND METHOD

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Sheet 7 of 8 16

Att'y Docket No. 14917.1.6

Group: 1743

COPY OF PAPERS
ORIGINALLY FILED

- ~~EGT~~A109 Ocvirk, Gregor, et al, "High Performance Liquid Chromatography Partially Integrated onto a Silicon Chip," 1995, Analytical Methods and Instrumentation, pp. 74-82.
- ~~EGT~~A110 Oliveres, Jose A., et al, "On-Line Mass Spectrometric Detection for Capillary Zone Electrophoresis," 1987, Analytical Chemistry, 59, pp. 1230-1231.
- ~~EGT~~A111 Overton, E.B., et al, "Development of a Temperature Programmed Microchip, High Resolution Gas Chromatograph/Mass Spectrometer for Volatile Organic Analysis," pp. 395-398.
- ~~EGT~~A112 Petersen, Kurt, "Biomedical Applications of MEMS," 1996, IEEE, pp. 239-242.
- ~~EGT~~A113 Raymond, Daniel E., et al, "Continuous Sample Pretreatment Using a Free-Flow Electrophoresis Device Integrated onto a Silicon Chip," September 15, 1994, Analytical Chemistry, Vol. 68, No. 18, pp. 2858-2865.
- ~~EGT~~A114 Roeraade, Johan, "Nano-Sized Systems for Bioanalysis (abstract)," Royal Institute of Technology, Sweden, pp. 3, 19 & 63.
- ~~EGT~~A115 Seler, Kurt, et al, "Electroosmotic Pumping and Valveless Control of Fluid Flow within a Manifold of Capillaries on a Glass Chip," October 15, 1994, Analytical Chemistry, Vol. 66, No. 20, pp. 3485-3491.
- ~~EGT~~A116 Seler, Kurt, et al, "Planar Glass Chips for Capillary Electrophoresis: Repetitive Sample Injection, Quantitation, and Separation Efficiency," 1993, Analytical Chemistry, Vol. 65, No. 10, pp. 1481-1488.
- ~~EGT~~A117 Shoffner, Mann A., et al, "Chip PCR. I. Surface Passivation of Microfabricated Silicon-Glass Chips for PCR," 1996, Nucleic Acids Research, Vol. 24, No. 2, pp. 375-379.
- ~~EGT~~A118 Sjolander, Stefan, et al, "Integrated Fluid Handling System for Biomolecular Interaction Analysis," 1991, Analytical Chemistry, 63, pp. 2338-2345.
- ~~EGT~~A119 Smith, R.D., et al, "New Developments in Microscale Separations and Mass Spectrometry for Biomonitoring: Capillary Electrophoresis and Electrospray Ionization Mass Spectrometry," 1993, Journal of Toxicology and Environmental Health, pp. 147-158.
- ~~EGT~~A120 Smith, Richard D., et al, "Improved Electrospray Ionization Interface for Capillary Zone Electrophoresis-Mass Spectrometry," 1988, Analytical Chemistry, Vol. 60, pp. 1948-1952.
- ~~EGT~~A121 Valaskovic, Gary A., et al, "Attomole-Sensitivity Electrospray Source of Large Molecule Mass Spectrometry," October 15, 1995, Analytical Chemistry, Vol. 67, No. 20, pp. 3802-3805.
- ~~EGT~~A122 Wahl, Jon H., et al, "Sheathless Capillary Electrophoresis-Electrospray Ionization Mass Spectrometry Using 10 μ m I.D. Capillaries: Analyses of Tryptic Digests of Cytochrome C," 1994, Journal of Chromatography A, 659, pp. 217-222.
- ~~EGT~~A123 Wang, Xuan-Qi, et al, "Polymer-Based Electrospray Chips for Mass Spectrometry," 1999, IEEE, pp. 523-528.
- ~~EGT~~A124 Whitehouse, Craig M., et al, "Electrospray Interface for Liquid Chromatographs and Mass Spectrometers," March, 1985, Analytical Chemistry, Vol. 57, No. 3, pp. 675-679.

Examiner:

THEKORN

Date Considered:

MAY 22, 2002

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609: draw line through citation if not in conformance and not considered

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Att'y Docket No. 14917.1.6

Group: 1743

Sheet 8 of 8/16

COPY OF PAPERS
ORIGINALLY FILED

Ecr A125

Woolley, Adam T., et al., "Ultra-High-Speed DNA Sequencing Using Capillary Electrophoresis Chips," 1995, Analytical Chemistry, 67, pp. 3676-3680.

Ecr A126

Woolley, et al., "Ultra-High-Speed DNA Fragment Separations Using Microfabricated Capillary Array Electrophoresis Chips," November, 1994, Proc. Natl. Acad. Sci., USA, Vol. 91, pp. 11348-11352.

Ecr A127

Yoshida, Yu, et al., "Direct Measurement of Mass Fragmentograms for Eluents from a Micro-Liquid Chromatograph Using an Improved Nebulizing Interface," January, 1980, Journal of HRC & CC, Vol. 3, pp. 16-20.

References Cited by Applicants

While the filing of Information Disclosure Statements is voluntary, the procedure is governed by the guidelines of Section 609 of the Manual of Patent Examining Procedure and 37 C.F.R. §§ 1.97 and 1.98. To be considered a proper Information Disclosure Statement, Form PTO-1449 shall be accompanied by a copy of each listed patent or publication or other item of information and a translation of the pertinent portions of foreign documents (if an existing translation is readily available to the applicant), an explanation of relevance of each reference not in the English language, and should be submitted in a timely manner as set out in MPEP Sec. 609.

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The reference designations "A1," "A2," etc. (referring to Applicant's reference 1, Applicant's reference 2, etc.) will be used by the Examiner in the same manner as Examiner's reference designations "A," "B," "C," etc. on Office Action Form PTO-1142.

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SUPPLEMENTAL INFORMATION DISCLOSURE CITATIONS MADE BY APPLICANT

U.S. Patent Documents

Examiner Initial*	Patent Number	Issue Date	Name	Class	Sub Class	Filing Date
<u>EGR</u> A1	4,480,259	10/30/84	Kruger, et al.	346	140	07/30/82
<u>EGR</u> A2	4,489,259	12/18/84	White, et al.	318	696	04/29/82
<u>EGR</u> A3	4,490,728	12/25/84	Vaught, et al.	346	1.1	10/07/82
<u>EGR</u> A4	4,590,482	05/20/86	Hay, et al.	346	1.1	12/14/83
<u>EGR</u> A5	5,162,650	11/10/92	Bier	250	288	01/25/91
<u>EGR</u> A6	5,423,964	06/13/95	Smith, et al.	204	180	08/02/93
<u>EGR</u> A7	5,481,110	01/02/96	Krishnaswamy, et al.	250	288	10/07/94
<u>EGR</u> A8	5,501,883	03/26/96	Ishikawa, et al.	428	1	07/27/94
<u>EGR</u> A9	5,523,566	06/04/96	Fuerstenau, et al.	250	282	07/20/94
<u>EGR</u> A10	5,536,939	07/16/96	Freidhoff, et al.	250	281	10/07/94
<u>EGR</u> A11	5,541,408	07/30/96	Sittler	250	288	02/17/95
<u>EGR</u> A12	5,563,639	10/08/96	Cameron, et al.	347	34	10/30/94
<u>EGR</u> A13	5,608,217	03/04/97	Franzen, et al.	250	288	03/10/95
<u>EGR</u> A14	5,640,010	06/17/97	Twerenbold	250	281	05/11/95
<u>EGR</u> A15	5,644,131	07/01/97	Hansen	250	292	05/22/96
<u>EGR</u> A16	5,705,813	01/06/98	Apffel, et al.	250	288	11/01/95
<u>EGR</u> A17	5,716,825	02/10/98	Hancock, et al.	435	286.5	11/01/95
<u>EGR</u> A18	5,747,815	05/05/98	Young, et al.	250	423	07/24/96
<u>EGR</u> A19	5,501,893	03/26/96	Laermer, et al.	428	161	11/27/93
<u>EGR</u> A20	5,750,988	05/12/98	Apffel et al.	250	288	02/03/97

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U.S. Patent Documents

Examiner Initial*	Patent Number	Issue Date	Name	Class	Sub Class	Filing Date
EGT A21	6,032,876	03/07/00	Bertsche et al.	239	418	12/01/98
EGT A22	6,066,848	05/23/00	Kassel et al.	250	288	12/03/98

Foreign Patent Documents

Examiner Initial*	Document Number	Publ. Date	Country or Patent Office	Sub Class	Trans- lation
EGT A23	EP259,796	01/03/96	Europe	250 288	N/A
EGT A24	EP 565,027	03/05/97	Europe	250 288	N/A
EGT A25	EP 588,952	09/01/99	Europe	250 288	N/A
EGT A26	EP 677,322	10/18/95	Europe	250 288	N/A
EGT A27	EP 692,713	01/17/96	Europe	250 288	N/A
EGT A28	EP 860,858	08/26/98	Europe	250 288	N/A
EGT A29	GB 2,287,356	09/13/95	Great Britain	250 288	N/A
EGT A30	WO 00/52455	09/08/00	PCT	250 288	N/A
EGT A31	PCT/US00/34999		PCT	250 288	N/A
EGT A32	PCT/US01/01785		PCT	250 288	N/A

Other Documents

(including author (if listed), title, relevant pages, date of publication including at least month and year).

Examiner

Initial*

EGT A33

John H. Knox, "Theoretical Aspects of LC with Packed and Open Small-Bore Columns," Journal of Chromatographic Science, Vol. 18, September, 1980, pages 453-461.

EGT A34

Source

James N. Alexander IV, "Development of a Nano-electrospray Mass Spectrometry

Examiner: THECKEN

Date Considered:

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for *Nanoscale Liquid Chromatography and Sheathless Capillary Electrophoresis*,

Rapid

Communication in mass Spectrometry, 12, July, 1998, pages 1187-1191.

ECR A35

Jörg P. Kutter, Stephen C. Jacobson, and J. Michael Ramsey, "Integrated Microchip Device with Electrokinetically Controlled Solvent Mixing for Isocratic and Gradient Elution in Micellar Electrokinetic Chromatography," *Analytical Chemistry*, Vol. 69, No. 24, December 1997, pages 5165-5171.

ECR A36

Bing He, Niall Tait, Fred Regnier, "Fabrication on Nanocolumns for Liquid Chromatography," *Analytical Chemistry*, Vol. 70, No. 18, September, 1998, Pages 3790-3797.

ECR A37

Matthias S. Wilm, Matthias Mann, "Electrospray and Taylor-Cone theory, Dole's beam of macromolecules at last?," *International Journal of Mass Spectrometry and Ion Processes*, June, 1994, pages 167-180.

ECR A38

David C. Gale and Richard D. Smith, "Small Volume and Low Flow-rate Electrospray Ionization Mass Spectrometry of Aqueous Samples," *Rapid Communications in Mass Spectrometry*, Vol. 7, September, 1993, pages 1017-1021.

ECR A39

Richard B. Cole, "Electrospray Ionization Mass Spectrometry," John Wiley & Sons, Inc., 1997, pages 1-62.

References Cited by Applicants

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Examiner:

THEERKUN

Date Considered:

MAY 22, 2002

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Form PTO-1449

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Sheet 4 of 16

Applicant:

James E. Moon, et al.

Serial No.:

097707,653 097702,955

Filing Date:

November 7, 2000

Att'y Docket No. 14917.1.6

For:

INTEGRATED MONOLITHIC MICROFABRICATED ELECTROSPRAY AND
LIQUID CHROMATOGRAPHY SYSTEM AND METHOD

Group: 1743



Each citation initiated by the Examiner will be printed on the issued patent in the same manner as references cited by the Examiner on Form PTO-892.

The reference designations "A1," "A2," etc. (referring to Applicant's reference 1, Applicant's reference 2, etc.) will be used by the Examiner in the same manner as Examiner's reference designations "A," "B," "C," etc. on Office Action Form PTO-1142.

Examiner:

THEPK02J

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Applicant:

Serial No.:

Filing Date:

For:

James E. Moon, et al.

09/707,653 09/702,953

November 7, 2000

INTEGRATED MONOLITHIC MICROFABRICATED ELECTROSPRAY AND LIQUID CHROMATOGRAPHY SYSTEM AND METHOD

Att'y Docket No. 14917.1.6

Group: 1741

13 16
Sheet 7 of 8

INFORMATION DISCLOSURE CITATIONS MADE BY APPLICANT

U.S. Patent Documents

Examiner Initial*	Patent Number	Issue Date	Name	Class	Sub Class	Filing Date
<u>EGT</u> A1	4,842,701	06/27/89	Smith, et al.	204	180.1	04/06/87
<u>EGT</u> A2	5,182,366	01/26/93	Huetner, et al.	530	334	05/15/90
<u>EGT</u> A3	5,541,400	06/24/97	Kaltenbach, et al.	210	198.2	10/23/95
<u>EGT</u> A4	5,872,010	02/16/99	Karger, et al.	436	173	07/03/96
<u>EGT</u> A5	5,917,184	06/29/99	Carson, et al.	250	288	02/07/97
<u>EGT</u> A6	5,969,353	10/19/99	Hsieh	250	288	01/22/98
<u>EGT</u> A7	5,993,633	11/30/99	Smith, et al.	204	601	07/31/97
<u>EGT</u> A8	5,994,696	11/30/99	Tai, et al.	250	288	01/21/98

Other Documents

(including author (if listed), title, relevant pages, date of publication including at least month and year)

Examiner
Initial*

- EGTA9 Arrish Desai, Yu-Cheng Tai, Michael T. Davis, and Terry D. Lee, "A MEMS Electrospray Nozzle for Mass Spectroscopy," 1997 International Conference in Solid State Sensors and Actuators, Chicago, June 16-19, 1997, p. 927-930
- EGTA10 David P. H. Smith, "The Electrohydrodynamic Atomization of Liquids," IEEB Transactions on Industry Applications, Vol. IA-22, No. 3, p. 527-535, May-June, 1986
- EGTA11 Stephen C. Jacobson, Roland Hergenroder, Lance B. Koutny, and J. Michael Ramsey, "High-Speed Separations on a Microchip," Anal. Chem., April 1, 1994, 66, 1114-1118
- EGTA12 Stephen C. Jacobson, Roland Hergenroder, Lance B. Koutny, and J. Michael Ramsey, "Open Channel Electrophoresis on a Microchip," Anal. Chem. 1994, 66, 2369-2373
- EGTA13 D. Jed Harrison, Karl Fluri, Kurt Seiler, Zhonghui Fan, Carlo S. Effenhauser, and Andreas Manz, "Micromachining a Miniaturized Capillary Electrophoresis-Based Chemical Analysis System on a Chip," Science, Vol. 261, August 1993, 895-897

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09/702,955

James E. Moon, et al.

69702,653

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INTEGRATED MONOLITHIC MICROFABRICATED ELECTROSPRAY AND
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Sheet 1 of 3

Att'y Docket No. 14917.1.6

Group: 1741

EG A14R.S. Ramsey and J.M. Ramsey, "Generating Electrospray from Microchip Devices Using Electroosmotic Pumping," *Analytical Chemistry*, Vol. 69, No. 6, March 15, 1997, p. 1174-1178EG A15Matthias Wurm and Matthias Mann, "Analytical Properties of the Nanoelectrospray Ion Source," *Analytical Chemistry*, Vol. 68, No. 1, January 1, 1996, p. 1-8EG A16Qifeng Xue, Frantisek Foret, Yuriy M. Dunayevskiy, Paul M. Zavacky, Nicol E. McGruer, and Barry L. Karger, "Multichannel Microchip Electrospray Mass Spectrometry," *Analytical Chemistry*, Vol. 69, No. 3, February 1, 1997, p. 426-430EG A17Malcolm Dole, L.L. Mack, R.L. Hixes, R.C. Mobley, L.D. Ferguson, and M.B. Allen, "Molecular Beams of Macromolecules," *The Journal of Chemical Physics*, Volume 49, Number 5, September 1, 1968, p. 2240-2249EG A18Masanichi Yamashita and John B. Fenn, *Journal of Chemical Physics*, Volume 88, 1984, p. 4451-4459

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Examiner:

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James P. Moon, et al.

09/702,955

November 7, 2000

INTEGRATED MONOLITHIC MICROFABRICATED ELECTROSPRAY AND LIQUID
CHROMATOGRAPHY SYSTEM AND METHOD

Sheet 4 of 7

Att'y Docket No. 14917.1.6

Group: 1741

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SUPPLEMENTAL INFORMATION DISCLOSURE CITATIONS MADE BY APPLICANTU.S. Patent Documents

Examiner Initial*	Patent Number	Issue Date	Name	Class	Sub Class	Filing Date
E.G.T. A1	6,245,227	06/12/2001	Moon, et al.	210	198.2	09/17/1998

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THERKUN

Date Considered:

May 22 2002

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Form PTO-1449

Applicant:

James E. Moon, et al.

Serial No.:

09/707,553

Filing Date:

November 7, 2000

For:

INTEGRATED MONOLITHIC MICROFABRICATED ELECTROSPRAY AND LIQUID CHROMATOGRAPHY SYSTEM AND METHOD

Sheet # of #

Att'y Docket No. 14917:1.6

Group: 1741



SUPPLEMENTAL INFORMATION DISCLOSURE CITATIONS MADE BY APPLICANT

U.S. Patent Documents

Examiner Initial*	Patent Number	Issue Date	Name	Class	Sub Class	Filing Date
EGT A1	6,110,343	08/29/2000	Ramsey, et al.	204	601	10/04/96

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Examiner: THEKOWDate Considered: MAY 22 2002

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